REMARKS

This paper is responsive to the Non-Final Office action dated May 25, 2006. Claims 1-58 were examined. Claims 1-5, 13-15, 24-27, 34-36, 38-40, and 45-58 stand rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent Application Publication No. 2003/0198112 to Eleyan et al. Claims 2-4, 6-12, 16, 20-23, 28-33, 37, and 41-44 are objected to as being dependent upon a rejected base claim.

Claim Rejections Under 35 U.S.C. § 102

Claims 1-5, 13-15, 24-27, 34-36, 38-40, and 45-58 stand rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent Application Publication No. 2003/0198112 to Eleyan et al. Regarding claim 1, Applicant respectfully maintains that Eleyan, alone or in combination with other references of record, fails to teach or suggest

preconditioning the matched devices to cause an initial shift in the characteristic in each of the matched devices and to thereby reduce an expected magnitude of any further lifetime shift in the characteristic of either matched device,

as required by claim 1. Eleyan teaches techniques, circuits and methods that "provide variable delay compensation for data-dependent mismatch in a characteristic of opposing devices, such as NBTI-related V_t shift based on disparate bias histories of opposing PMOS devices of a sense amplifier of a memory circuit." Paragraph 0011. Applicant respectfully points the Examiner to at least paragraph 1033 of the application which states:

[1033] In the exemplary circuit described, the potential V_t imbalance between cross-coupled PMOS devices TP1, TP2 which may develop over time may be reduced by applying NBTI bias conditions to intentionally shift the threshold voltage of each device TP1, TP2. Such NBTI effects are frequently monotonic, and the shifted threshold voltage tends to saturate at a final value. By accomplishing a portion of this ultimate shift during this intentional shift period, the amount by which the threshold voltage of either device can shift during the remaining device lifetime is that much reduced. Consequently, even if a data-dependent mismatch occurs over the product lifetime, the maximum imbalance is reduced. Preferably such

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preconditioning occurs during a burn-in operation because the elevated temperature during burn-in accelerates the NBTI effect.

Paragraph 1033, emphasis added. Nowhere does Eleyan teach or suggest <u>preconditioning</u> the matched devices to cause an <u>initial shift</u> in the characteristic in each of the matched devices <u>and to thereby reduce an expected magnitude of any further lifetime shift</u> in the characteristic of either matched device, as required by claim 1. For at least these reasons, Applicant respectfully maintains that claim 1 distinguishes over Eleyan and all references of record. Accordingly, Applicant respectfully requests that the rejection of claim 1 and all claims dependent thereon, be withdrawn.

Regarding claim 5, Applicant respectfully maintains that Eleyan, alone or in combination with other references of record, fails to teach or suggest that

> the <u>preconditioning</u> step is <u>carried out at an elevated temperature</u> to promote the shift in the characteristic,

as required by claim 5. Eleyan teaches techniques, circuits and methods that "provide variable delay <u>compensation for data-dependent mismatch</u> in a characteristic of opposing devices, such as <u>NBTI-related V_t shift based on disparate bias histories</u> of opposing PMOS devices of a sense amplifier of a memory circuit." Paragraph 0011. Nowhere does Eleyan teach or suggest preconditioning or that a <u>preconditioning</u> step is <u>carried out at an elevated temperature</u> to promote the shift in the characteristic, as required by claim 5. For at least these reasons, Applicant respectfully maintains that claim 5 distinguishes over Eleyan and all references of record. Accordingly, Applicant respectfully requests that the rejection of claim 5 and all claims dependent thereon, be withdrawn.

Regarding claim 24, Applicant respectfully maintains that Eleyan, alone or in combination with other references of record, fails to teach or suggest

> a <u>preconditioning circuit</u> for subjecting the matched devices to a particular condition for a length of time sufficient <u>to cause an initial shift</u> in the

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characteristic in each of the matched devices and to
thereby reduce an expected magnitude of any further
lifetime shift in the characteristic of either matched
device,
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as required by claim 24. The Office action relies on Figure 3 of Eleyan to supply this teaching. Eleyan teaches a variable delay circuit, e.g., circuit 300. Paragraph 1028. Circuit 300 of Eleyan "provide[s] variable delay compensation for data-dependent mismatch in a characteristic of opposing devices, such as NBTI-related V_t shift based on disparate bias histories of opposing PMOS devices of a sense amplifier of a memory circuit." Paragraph 0011. Nowhere does Eleyan teach or suggest a preconditioning circuit for subjecting the matched devices to a particular condition for a length of time sufficient to cause an initial shift in the characteristic in each of the matched devices and to thereby reduce an expected magnitude of any further lifetime shift in the characteristic of either matched device, as required by claim 24. For at least these reasons, Applicant respectfully maintains that claim 24 distinguishes over Eleyan and all references of record. Accordingly, Applicant respectfully requests that the rejection of claim 24 and all claims dependent thereon, be withdrawn.

Regarding claim 48, Applicant respectfully maintains that Eleyan, alone or in combination with other references of record, fails to teach or suggest

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a preconditioning circuit for subjecting the matched
devices to a particular condition for a length of time
sufficient to cause an initial shift in the
characteristic in each of the matched devices and to
thereby reduce an expected magnitude of any further
lifetime shift in the characteristic of either matched
device,
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as required by claim 48. The Office action relies on Figure 3 of Eleyan to supply this teaching. Eleyan teaches a variable delay circuit, e.g., circuit 300. Paragraph 1028. Circuit 300 of Eleyan "provide[s] variable delay compensation for data-dependent mismatch in a characteristic of opposing devices, such as NBTI-related V_t shift based on disparate bias histories of opposing

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PMOS devices of a sense amplifier of a memory circuit." Paragraph 0011. Nowhere does Eleyan teach or suggest a preconditioning circuit for subjecting the matched devices to a particular condition for a length of time sufficient to cause an initial shift in the characteristic in each of the matched devices and to thereby reduce an expected magnitude of any further lifetime shift in the characteristic of either matched device, as required by claim 48. For at least these reasons, Applicant respectfully maintains that claim 48 distinguishes over Eleyan and all references of record. Accordingly, Applicant respectfully requests that the rejection of claim 48 and all claims dependent thereon, be withdrawn.

Regarding claim 56, Applicant respectfully maintains that Eleyan, alone or in combination with other references of record, fails to teach or suggest

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one or more media further encoding a representation of
a preconditioning circuit for subjecting the matched
devices to a particular condition for a length of time
sufficient to cause an initial shift in the
characteristic in each of the matched devices and to
thereby reduce an expected magnitude of any further
lifetime shift in the characteristic of either matched
device,
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as required by claim 56. The Office action relies on Figure 3 of Eleyan to supply this teaching. Eleyan teaches a variable delay circuit, e.g., circuit 300. Paragraph 1028. Circuit 300 of Eleyan "provide[s] variable delay compensation for data-dependent mismatch in a characteristic of opposing devices, such as NBTI-related V_t shift based on disparate bias histories of opposing PMOS devices of a sense amplifier of a memory circuit." Paragraph 0011. Nowhere does Eleyan teach or suggest a preconditioning circuit for subjecting the matched devices to a particular condition for a length of time sufficient to cause an initial shift in the characteristic in each of the matched devices and to thereby reduce an expected magnitude of any further lifetime shift in the characteristic of either matched device, as required by claim 56. For at least these reasons, Applicant respectfully maintains that claim 56 distinguishes over Eleyan and all references of record. Accordingly, Applicant respectfully requests that the rejection of claim 56 and all claims dependent thereon, be withdrawn.

Allowable Subject Matter

Applicant appreciates the indication of allowable subject matter in claims 2-4, 6-12, 16, 20-23, 28-33, 37, and 41-44. Applicant believe that claims 2-4, 6-12, 16, 20-23, 28-33, 37, and 41-44 depend from allowable base claims and are allowable for at least this reason.

Summary

Claims 1-58 are in the case. All claims are believed to be allowable over the art of record, and a Notice of Allowance to that effect is respectfully solicited. Nonetheless, if any issues remain that could be more efficiently handled by telephone, the Examiner is requested to call the undersigned at the number listed below.

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